

WHAT IS CLAIMED IS:

Claim 1. A congenic rat comprising a mutant GPR10 gene, wherein said congenic rat is obtained by crossing a Otsuka Long-Evans Tokushima Fatty (OTELF) rat (ATCC No. 72016) with a wild-type rat, and wherein said congenic rat exhibits a prolonged immobilization time when assayed in a forced swim test compared to said wild-type rat and anti-anxiety behavior in a elevated plus-maze test compared to said wild-type rat.

Claim 2. The congenic rat of Claim 1, wherein said mutant GPR10 gene consists essentially of the DNA sequence of SEQ ID NO:2.

Claim 3. The congenic rat of Claim 1, wherein said wild-type rat comprises a GPR10 gene having the DNA sequence of SEQ ID NO:1.

Claim 4. The congenic rat of Claim 1, wherein said OTELF rat comprises said mutant GPR10 gene.

Claim 5. A tissue or cell obtained from the congenic rat of Claim 1, wherein said tissue and cell express said mutant GPR10 gene.

Claim 6. A culture of the cell of Claim 5.

Claim 7. An isolated DNA molecule encoding a mutant GPR10 protein consisting essentially of the amino acid sequence of SEQ ID NO:7 or SEQ ID NO:9.

Claim 8. The isolated DNA molecule of Claim 7, wherein said DNA molecule consists essentially of the DNA sequence of SEQ ID NO:2 or SEQ ID NO:5.

Claim 9. An isolated fragment of human GPR10 consisting essentially of the amino acid sequence of SEQ ID NO:10.

Claim 10. A method for screening for a compound that inhibits GPR10 protein activity comprising:

- (a) contacting a test compound with:
  - (i) the congenic rat of Claim 1, and
  - (ii) the wild-type rat of Claim 1; and
- (b) assaying for GPR10 activity in the resulting rats (i) and (ii),

wherein when said activity is found to differ in said rats (i) and (ii), said test compound is identified as a compound that inhibits GPR10 protein activity.

Claim 11. The method of Claim 10, wherein said GPR10 activity is depression in a forced swimming test or fear and anxiety in an elevated plus-maze test.

Claim 12. A method for screening for a compound that inhibits GPR10 protein activity comprising:

- (a) contacting a test compound with:
  - (i) the tissue or cell of Claim 5 or the isolated protein of Claim 9, and with
  - (ii) the tissue or cell obtained from a wild-type rat which expresses wild-type GPR10 protein or wild-type GPR10 protein, respectively; and

- (b) assaying for GPR10 activity in the resulting tissues or cells or isolated proteins (i) and (ii),

wherein when said activity is found to differ in said tissues or cells or isolated proteins (i) and (ii), respectively said test compound is identified as a compound that inhibits GPR10 protein activity.

Claim 13. The method of Claim 12, wherein said GPR10 protein activity is binding of PrRP as measured in a competition assay, or release of arachidonic acid metabolite.

Claim 14. A method for screening for a compound useful in treating depression or anxiety comprising:

- (a) administering the test compound identified as described in Claim 10 or 12 as a compound that inhibits GPR10 activity, to a mammal suffering from depression or anxiety; and
- (b) assaying for amelioration of said depression or anxiety in the resulting mammal so as to identify a compound useful in treating depression or anxiety.